



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

August 10, 2016

Mr. John Dent
Site Vice President
Entergy Nuclear Operations, Inc.
600 Rocky Hill Road
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION – INTEGRATED INSPECTION
REPORT 05000293/2016002

Dear Mr. Dent:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Pilgrim Nuclear Power Station (PNPS). The enclosed report documents the inspection results, which were discussed on August 1, 2016, with you and other members of your staff.

NRC inspectors examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The inspectors documented one finding of very low safety significance (Green) in this report. This finding does not involve a violation of regulatory requirements. Further, inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating the violation as a non-cited violation consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the non-cited violation in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at PNPS. In addition, if you disagree with the cross-cutting aspect assigned to any finding, or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspector at PNPS.

J. Dent

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In accordance with Title 10 of the *Code of Federal Regulations* (CFR) 2.390 of the NRCs "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Arthur L. Burritt, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket No. 50-293
License No. DPR-35

Enclosure:
Inspection Report 05000293/2016002
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

J. Dent

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-293

License No. DPR-35

Report No. 05000293/2016002

Licensee: Entergy Nuclear Operations, Inc. (Entergy)

Facility: Pilgrim Nuclear Power Station (PNPS)

Location: 600 Rocky Hill Road
Plymouth, MA 02360

Dates: April 1, 2016 through June 30, 2016

Inspectors: E. Carfang, Senior Resident Inspector
S. Elkhiamy, Resident Inspector (Acting)
S. Horvitz, Resident Inspector (Acting)
B. Pinson, Resident Inspector
J. Pflingsten, Project Engineer
B. Dionne, Health Physicist Inspector
S. Galbreath, Reactor Engineering Inspector

Approved By: Arthur L. Burritt, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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SUMMARY

Inspection Report 05000293/2016002; 04/01/2016 – 06/30/2016; PNPS; Follow-up of Events and Notices of Enforcement Discretion.

This report covered a three-month period of inspection by resident inspectors and announced baseline inspections performed by regional inspectors. The inspectors identified one self-revealing finding of very low safety significance (Green) and reviewed one licensee-identified violation of very low safety significance. The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 26, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

Cornerstone: Initiating Events

- Green. A Green self-revealing finding was identified for the inadequate design verification of the travelling screens system in accordance with EN-DC-149, "Acceptance of Vendor Documents." Specifically, Entergy replaced travelling screens 'C' and 'D' during the May 2015 refueling outage, but did not identify that the installed shear pins did not meet the plant design during engineering reviews of the modification. This caused the shear pins in the 'C' and 'D' traveling screens to prematurely fail during a large seaweed intrusion event on May 5, 2016, which led to a 50 percent rapid reduction in power. Entergy installed the modified shear pin assembly into the 'C' and 'D' travelling screens per the plant design and restored the screens to service on May 6, 2016. The finding was entered into the corrective action program (CAP) as CR-2016-3202.

This finding is more than minor because it is associated with the Initiating Events cornerstone attribute of Design Control and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically the failure of the 'C' and 'D' travelling screens shear pins resulted in an unplanned 50 percent reduction in power. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that the finding had a cross-cutting aspect in Human Performance, Avoid Complacency, because Entergy did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk. Specifically, Entergy did not identify that vendor supplied documentation and part numbers did not match Entergy's updated documentation. [H.12] (Section 4OA3)

Other Findings

A violation of very low safety significance that was identified by Entergy was reviewed by the inspectors. Corrective actions taken or planned by Entergy have been entered into Entergy's CAP. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

PNPS began the inspection period at 100 percent power. On April 29, 2016, the unit down powered 50 percent to perform a surveillance test for the 1C main steam isolation valve (MSIV) and returned to full power the same day. On May 5, 2016, operators reduced power to approximately 50 percent due to a large seaweed mat breaking a traveling screen shear pin. Following the shear pin replacement, operators returned the unit to 100 percent on May 6, 2016. On June 22, 2016, the unit down powered to 30 percent to repair a main condenser tube leak. The unit returned to full power on June 23, 2016. The unit remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors reviewed Entergy's readiness for the onset of seasonal high temperatures. The review focused on the ventilation systems for the battery rooms, emergency diesel generators (EDGs), and reactor building. The inspectors reviewed the Final Safety Analysis Report (FSAR), technical specifications (TSs), control room logs, and the CAP to determine what temperatures or other seasonal weather could challenge these systems, and to ensure Entergy personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including Entergy's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during hot weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Summer Readiness of Offsite and Alternate Alternating Current (AC) Power Systems

a. Inspection Scope

The inspectors reviewed plant features and procedures for the operation and continued availability of the offsite and alternate AC power system to evaluate readiness of the systems prior to seasonal high grid loading. The inspectors reviewed Entergy's procedures affecting these areas and the communications protocols between the transmission system operator and Entergy. This review focused on changes to the established program and material condition of the offsite and alternate AC power equipment. The inspectors assessed whether Entergy established and implemented

appropriate procedures and protocols to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system. The inspectors evaluated the material condition of the associated equipment by interviewing the responsible system engineer, reviewing condition reports and open work orders, and walking down portions of the offsite and AC power systems including the 345 kilovolt (kV) and 23kV switchyard.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04 – 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- Site safety-related locked component lineup on May 26, 2016
- K-117 diesel powered air compressor on May 31, 2016
- Control room high efficiency air filtration system on June 23, 2016

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the FSAR, TSs, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted the system's performance of its intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 5 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Entergy controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire

barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Salt service water bay on April 7, 2016
- Cable spreading room on April 29, 2016
- 'A' Switchgear room on June 2, 2016
- 'A' EDG building and day tank room on June 2, 2016
- 'B' EDG building and day tank room on June 2, 2016

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Annual Review of Cables Located in Underground Bunkers/Manholes

a. Inspection Scope

The inspectors conducted an inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could affect risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including cable pit 1 containing shutdown transformer control cables, cable pit 4 containing main vent stack cables, manhole 3 containing startup transformer cables, and pull box 1A containing shutdown transformer cables, to verify that the cables were not submerged in water, that cables and/or splices appeared intact, and to observe the condition of cable support structures. When applicable, the inspectors verified proper sump pump operation and verified level alarm circuits were set in accordance with station procedures and calculations to ensure that the cables will not be submerged. The inspectors also ensured that drainage was provided and functioning properly in areas where dewatering devices were not installed.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (711111.07A – 1 sample)

a. Inspection Scope

The inspectors reviewed the E-118B, 'B' EDG lube oil cooler heat exchanger readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component and verified Entergy's commitments to NRC Generic Letter 89-13, "Service Water System Requirements Affecting Safety-Related Equipment." The inspectors observed actual performance tests and reviewed the results for the heat exchanger. The inspectors discussed the results of the most recent inspection with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that Entergy initiated appropriate corrective actions for identified

deficiencies. The inspectors also verified that the number of tubes plugged within the heat exchanger did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance (71111.11Q – 2 samples)

.1 Quarterly Review of Licensed Operator Regualification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator scenarios on April 25 and April 27, 2016. The first observed scenario, conducted as a training exercise, included a failure to scram due to hydraulic locking following a turbine control malfunction. The scenario required a Site Area Emergency declaration. A steam leak developed requiring a cooldown which could not be initiated until the reactor was shut down. The second observed scenario was conducted as an ungraded crew evaluation and included a loss of all high pressure reactor pressure vessel injection, requiring emergency depressurization and level restoration with low pressure systems.

The inspectors evaluated operator performance during the simulated events and verified completion of risk significant operator actions, including the use of abnormal operating procedures and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed control room operations during restoration of reactor water cleanup system operation after installation of leak repair connections on April 25 and 26, 2016. During the observations, the crew responded to a field report of excessive demineralized water leakage from the flow totalizer in the combined makeup lines to the reactor building and turbine building closed cooling water head tanks. The crew utilized prints to determine isolation boundaries and directed local isolation and bypassing of the leaking component. They followed up by evaluating necessary compensatory measures while the totalizer is out of service. The crew also responded to a low failure of a local power range monitor that failed low and bypassed the affected instrument.

In addition, inspectors observed MSIV 1C stroke testing on April 29, 2016, and the downpower of the unit to 30 percent power for main condenser tube leak repair on June 22, 2016. The inspectors observed crew performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance work orders, and maintenance rule basis documents to ensure that Entergy was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the structure, system, or component was properly scoped into the maintenance rule in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65 and verified that the (a)(2) performance criteria established by Entergy staff was reasonable. As applicable, for structures, systems, and components classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these structures, systems, and components to (a)(2). Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- 23kV and transformers the week of May 23, 2016
- Emergency lighting units the week of June 20, 2016

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Entergy personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Entergy performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS

requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Emergent 'A' EDG unavailability during planned maintenance on 'B' EDG on April 12, 2016
- Emergent instrument air pressure drop on May 4, 2016
- Planned high pressure core injection pump maintenance with increased risk due to 'D' salt service water pump unavailability on May 9, 2016
- Planned 'B' residual heat removal (RHR) loop maintenance with increased risk due to emergent X-105 instrument air dryer unavailability on May 16, 2016
- Planned 'A' EDG inoperability followed by emergent 'A' EDG inoperability on June 1, 2016
- Planned heavy load lift of a resin cask to the refuel floor on June 14, 2016

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 6 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions based on the risk significance of the associated components and systems:

- 'E' reactor building closed cooling water (RBCCW) pump switch failure on February 18, 2016
- Main control room door inoperability impact on control room envelope on April 3, 2016
- MSIV AO-203-1C primary containment isolation valve exceeded allowable closing time on April 5, 2016
- 'A' RBCCW loop automatic makeup valve not controlling in band on April 28, 2016
- Electric fire pump failed megger test on May 17, 2016
- 10 CFR Part 21 operability review of 'A' RHR pump breaker on May 21, 2016

The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and FSAR to Entergy's evaluations to determine whether the components or systems were operable. The inspectors confirmed, where appropriate, compliance with bounding limitations associated with the evaluations. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Entergy.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)Permanent Modificationsa. Inspection Scope

The inspectors evaluated a modification to the salt service water system implemented by engineering change (EC) packages 64673, "Repair of Salt Service Water Pipe Support H29-1-1064," EC 64688, "Repair of Salt Service Water Pipe Support H29-1-1063," and EC 64713, "Repair of Salt Service Water Pipe Support H29-1-1062." The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the upgrade and design change, including replacement of embedded plates for pipe supports with newly installed expansion anchored baseplate arrangement. The inspectors also reviewed revisions to plant drawings to ensure that the newly installed arrangement is reflected in plant documentation. Inspectors walked down the modification to verify the as implemented configuration matched the as designed configuration.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 5 samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with the information in the applicable licensing basis and/or design basis documents, and that the test results were properly reviewed and accepted and problems were appropriately documented. The inspectors also walked down the affected job site, observed the pre-job brief and post-job critique where possible, confirmed work site cleanliness was maintained, and witnessed the test or reviewed test data to verify quality control hold point were performed and checked, and that results adequately demonstrated restoration of the affected safety functions.

- Half scram of 'B' reactor protection system channel on scram discharge instrument volume level Hi during control rod scram time testing on April 4, 2016
- Scram discharge instrument volume vent and drain valve dual indication troubleshooting on April 6, 2016
- 'A' EDG jacket water coolant line fitting repair on April 12, 2016
- 'B' EDG maintenance outage on April 15, 2016
- 'A' RBCCW pump mechanical seal replacement on June 7, 2016

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant structures, systems, and components to assess whether test results satisfied TSs, the FSAR, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- 'A' loop select logic system testing of low pressure coolant injection on April 11, 2016
- 4kV bus A5 and A6 undervoltage testing on April 25, 2016
- MSIV 1C stroke testing on April 29, 2016
- Traverse incore probe run and local power range monitor calibration on May 3-4, 2016
- 'B' low pressure coolant injection quarterly operability test on May 19, 2016
- 'E' RBCCW quarterly operability test on May 20, 2016 (IST)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness1EP6 Drill Evaluation (71114.06 – 1 sample)Emergency Preparedness Drill Observationa. Inspection Scope

The inspectors evaluated the conduct of a routine Entergy emergency drill on April 20, 2016, to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator and technical support center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspectors' observations with those identified by Entergy staff in order to evaluate Entergy's critique and to verify whether the Entergy staff was properly identifying weaknesses and entering them into the CAP.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2RS5 Radiation Monitoring Instrumentation (71124.05 – 3 samples)

a. Inspection Scope

The inspectors reviewed performance in assuring the accuracy and operability of radiation monitoring instruments used to protect occupational workers. The inspectors used the requirements in 10 CFR 20; 10 CFR 50, Appendix I; TSs; Offsite Dose Calculation Manual (ODCM); regulatory guides; applicable industry standards; and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors reviewed: Pilgrim's 2014 and 2015 annual effluent and environmental reports; FSAR; ODCM; radiation protection audits; records of in-service survey instrumentation; and procedures for instrument source checks and calibrations.

Walkdowns and Observations (1 sample)

The inspectors conducted walkdowns of plant area radiation monitors, continuous air monitors, and process monitoring systems. The inspectors assessed material condition of these systems and that the monitor configurations aligned with the ODCM and the FSAR. The inspectors checked the calibration and source check status of various portable radiation survey instruments and contamination detection monitors for personnel and equipment.

Calibration and Testing Program (1 sample)

The inspectors reviewed the current detector, electronic channel calibration, functional testing results, and alarm setpoints for: portal monitors, personnel contamination monitors, small article monitors, portable survey instruments, area radiation monitors, air samplers, and continuous air monitors.

Instrument Calibrator

The inspectors reviewed the calibration standards used for portable instrument calibrations and response checks to verify that instruments were calibrated by a facility that used National Institute of Science and Technology traceable sources.

Calibration and Check Sources

The inspectors reviewed the plant waste stream characterization to assess whether the calibration sources used were representative of the radiation encountered in the plant.

Problem Identification and Resolution (1 sample)

The inspectors verified that problems associated with radiation monitoring instrumentation were identified at an appropriate threshold and properly addressed in the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Unplanned Scrams, Unplanned Power Changes, and Unplanned Scrams with Complications (3 samples)

a. Inspection Scope

The inspectors reviewed Entergy's submittals for the following Initiating Events Cornerstone performance indicators for the period of April 1, 2015, through March 31, 2016.

- Unplanned scrams/7000 hours
- Unplanned power changes/7000 hours
- Unplanned scrams with complications

To determine the accuracy of the performance indicator data reported during those periods, inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors reviewed Entergy's operator narrative logs, condition reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 3 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify Entergy entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended condition report

screening meetings. The inspectors also confirmed, on a sampling basis, that, as applicable, for identified defects and non-conformances, Entergy performed an evaluation in accordance with 10 CFR Part 21.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues to identify trends that might indicate the existence of more significant safety concerns. As part of this review, the inspectors included repetitive or closely-related issues documented by Entergy in trend reports, site performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors reviewed Entergy's CAP database for the first and second quarters of 2016 to assess condition reports written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily condition report review (Section 40A2.1). The inspectors also reviewed the Entergy trend reports for January through June 2016. The reports were conducted in accordance with EN-LI-FAP-006, "Trending and Performance Review Process," to verify that Entergy personnel were appropriately evaluating and trending adverse conditions using applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors evaluated a sample of departments that are required to provide inputs into the trend reports. Inspectors focused on Operations, Maintenance, and Work Management organizations. The trends reviewed issues and events over the past six months and identified emerging and adverse trends. The inspectors verified that these issues were entered into the CAP. The inspectors reviewed a negative trend that was identified and entered into the CAP regarding four untimely entries in TS action statements. All four untimely entries were determined to be minor and are not subject to enforcement action in accordance with the NRC's Enforcement Policy because the time of the condition did not exceed the allowed outage time specified by the applicable TS limiting condition for operation. This issue was entered into the CAP as CR 2016-3133. The inspectors also reviewed corrective maintenance backlogs, control room deficiency tags, and operator workarounds and concluded they were adequately addressed within the scope of the CAP.

.3 Annual Sample: Review of Initial Interim Actions associated with Column 4 Entry

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's initial interim actions associated with entry into the Repetitive Degraded Cornerstone Column (Column 4) of the Reactor Oversight Process Action Matrix. Entergy developed interim actions to

address the declining performance at PNPS until the station completes development and implementation of a formal comprehensive recovery plan. The initial interim actions targeted the five focus areas for the upcoming Inspection Procedure 95003 inspection, as identified in Pilgrim's 2015 annual assessment letter, dated March 2, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16061A419). These focus areas are the CAP and safety culture (Inspection Procedure 95003 sections 02.02 and 02.07 – 02.09), as well as human performance, procedure quality, and equipment performance (Inspection Procedure 95003 sections 02.03c, 02.03d, and 02.03e).

All of the initial interim actions were identified by November 2015, and implemented by December 2015, with the exception of actions to address CAP weaknesses. The CAP interim actions were not fully implemented until late January 2016, due to resource limitations. The initial interim actions are documented in the Pilgrim Station 2016/2017 Recovery Plan, Appendix D – Interim 95003 Actions, dated February 2016. The specific items reviewed in each area are described below. Additionally, inspectors reviewed Entergy's monthly self-assessments related to implementation of the interim actions.

Human Performance

Entergy implemented monthly in-plant observations of planned work by supervisors and above. These observations also include paired observations, with both a supervisor and manager. All observations are at least two hours in length, and the station performs between 60 and 75 observations each month. In addition to review of the observation performance documentation, the inspectors evaluated five in-plant observations to determine whether observers were appropriately identifying and correcting human performance issues.

Procedure Quality

Entergy is reviewing 64 procedures that are entered by operators based on an event or system loss. This action originates from the deficiencies identified in the "Loss of Instrument Air" procedure during the January 27, 2015, partial loss of off-site power. Procedure revisions were in progress at the close of this inspection period; therefore the quality of the revisions to date could not be assessed.

Corrective Action Program

Entergy brought in an industry CAP expert to mentor the CAP organization. The mentor observed the following meetings and provided feedback: departmental performance improvement coordinator (DPIC) condition report screenings, work order priority screenings, condition report review group management meetings (CRG), and corrective action review board (CARB) meetings. Inspectors observed the feedback process at DPIC, CRG, and CARB meetings, and verified that mentor-identified issues were entered into the CAP in accordance with program requirements.

Equipment Performance

Entergy identified numerous interim actions to address equipment performance issues. Actions included:

- The use of risk reviews in the deferral of critical preventive maintenance (PM) work orders. Risk reviews are performed using procedure 1.3.142, "Risk Review and Disposition." One purpose of the procedure is to ensure the management team understands the latent risk associated with not performing an action, such as a critical PM.
- Key system health work orders now require the approval of the plant health committee (PHC) to be moved in the schedule and the PHC priorities are focused on addressing equipment in need of immediate repair.
- A scram mitigation strategy was implemented to address concerns associated with on-line maintenance/surveillance tests using the risk review process and critical evolution meetings. A critical evolution meeting uses a cross-functional group to challenge the performance of activities at the site in an attempt to identify and address potential concerns with an activity before it is performed.

The inspectors observed several critical evolution meetings, reviewed key system health order performance, and reviewed the expectations set forth by Entergy on deferral of critical PMs.

Nuclear Safety Culture

Nuclear safety culture is defined as "an organization's core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals" in EN-QV-136, "Nuclear Safety Culture Monitoring."

Entergy uses a nuclear safety culture monitoring panel to monitor the site's safety culture. The panel reviews inputs from several site programs including CAP and employee concerns in an attempt to identify precursors of degrading site safety culture that may indicate additional management attention is needed. This information is also provided to the corporate safety culture executive team for their consideration.

Self-assessments were not performed in the area of nuclear safety culture, however, additional actions were taken to address identified performance concerns. Specifically, the nuclear safety culture monitoring panel increased the frequency of meetings from once per quarter to once per month. Inspectors observed the May 2016 and June 2016 meetings. At both meetings, in addition to Entergy staff, two external observers attended the meeting to provide feedback to Entergy's staff. Entergy staff identified areas with declining safety culture during these meetings and entered the issues into the CAP under 2016-5074.

b. Findings and Observations

No findings were identified.

In general, the inspectors determined that Entergy was performing initial interim actions as required by their plan, as well as monitoring plant performance recovery indicators. The inspectors assessed the actions and determined that Pilgrim remains safe to operate.

Inspectors reviewed the station's monthly self-assessments in four of the five target areas: (CAP, Equipment Performance, Human Performance, and Procedure Quality). The assessments determined if action items were performed as directed, but did not assess the effectiveness of the actions in improving site performance. Corrective

actions were added to CR 2015-7583 to perform monthly assessments of key performance indicators to determine the overall effectiveness of the interim actions. These assessments were commenced in May 2016. The inspectors reviewed the target area monthly self-assessments, recovery performance indicators, and two performance indicator monthly assessments (April and May 2016).

In the area of human performance, inspectors did not identify any significant issues related to interim actions. A low level trend in non-consequential human performance errors was identified by Entergy and added to the key performance indicators to track improvement progress.

In the area of equipment performance, inspectors did not identify any significant issues related to interim actions. Most of the actions were a reinforcement of existing processes with self-assessment to identify gaps in performance.

In the area of CAP, inspectors did not identify any significant issues related to interim actions. Actions focused on third-party assistance in identifying process gaps and appear to be improving CAP performance.

In the area of procedure quality, inspectors could not assess effectiveness because actions were not completed during the inspection period.

In the area of nuclear safety culture, inspectors did not identify any significant issues related to interim actions. Meetings were performed with industry experts in attendance. Negative behavior trends were identified and entered into the corrective action program as required.

The inspectors identified the following observations related to site performance in this area:

- Inspectors observed that the procedure quality interim action to update 64 procedures was not completed by May 6, 2016, as originally scheduled. The interim action was initially tracked by a program outside of the CAP. The new completion date was extended to August 2016 when the interim action was entered into the CAP under CR 2016-1226, dated April 14, 2016.
- Inspectors identified minor discrepancies related to the movement of key system health work orders due to the unavailability of parts without notifying the PHC. This was contrary to EN-DC-336, "Plant Health Committee," however, the inspectors determined this was not more than minor because it did not result in the untimely repair of the affected equipment. Entergy did not identify this in the equipment performance area self-assessment and entered the issue into the CAP as CR 2016-2160. Entergy now reviews all rescheduled key system health work orders at the weekly PHC meeting.
- Inspectors observed an activity on the standby gas treatment system on March 15, 2016, and identified a minor procedure compliance error and the failure to use human performance tools such as peer checking and reviewing of system response, both of which were not identified by licensee observers. For this case, contrary to procedure EN-HU-106, operators did not perform a step in the procedure as written, however, this issue was considered minor due to the lack of impact on safety-related

equipment. The standby gas treatment system was placed in standby, contrary to the procedure requirement to place it in off. This was immediately corrected by the operator with no adverse impact to the system. Entergy entered this into the CAP under CRs 2016-1844 and 2016-1847.

- During review of the recovery performance indicators, the inspectors identified three minor errors in the data contributing to three indicators (failure of critical components, reactivity management, and systems in red and yellow status). The inspectors determined these errors were not more than minor because, when they were corrected, the change in the indicators did not indicate significant degradation in plant performance that necessitated a change in current licensee recovery actions. Entergy entered this into the CAP under CR 2016-4060.

The inspectors screened each of these observations in accordance with IMC 0612, Appendix B, "Issue Screening," and IMC 0612, Appendix E, "Examples of Minor Issues," and determined that these issues were minor for reasons discussed above and therefore not subject to enforcement action in accordance with the NRC's Enforcement Policy.

.4 Annual Sample: Operability Review of Degraded and Non-Conforming Items

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's evaluations and corrective actions associated with operable degraded/non-conforming items. Pilgrim currently has 25 operable degraded/non-conforming items that are open. After reviewing the open items, a sample of 5 operable degraded/non-conforming items were selected for an in-depth review:

- CR-2010-0899 - 'A' EDG lube oil cooler outlet temperature outside of normal band requirements
- CR-2011-4353 - 10 CFR 21 regarding seismic impact on the ability of control blades to scram when channel control blade interference occurs
- CR-2014-4580 – 'A' EDG governor has a lower DC voltage than required
- CR-2015-1736 – 'A' EDG undervoltage alarm relay 127-509/2 is out of tolerance and requires replacement
- CR-2015-2336 - 'B' EDG undervoltage relay alarm 127-609/2 is out of tolerance and requires calibration

The inspectors assessed Entergy's problem identification threshold, problem analysis, extent of condition reviews, compensatory actions, and the prioritization and timeliness of Entergy's corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy's CAP and 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

b. Findings and Observations

No findings were identified.

The inspectors determined Entergy's overall response to the operable degraded/non-confirming items were commensurate with the safety significance, timely, and the actions taken and planned were reasonable to resolve the issues. The inspectors found that Entergy took appropriate actions to identify the direct and apparent causes of the issues. Entergy also performed extent of conditions reviews to ensure that other systems, structures, and components were not impacted. In all cases reviewed, Entergy identified the issues and has either corrected the issues or entered them into their work management process for proper resolution.

4OA3 Follow-up of Events and Notices of Enforcement discretion (71153 – 1 sample)

Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Entergy made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Entergy's follow-up actions related to the events to assure that Entergy implemented appropriate corrective actions commensurate with their safety significance.

- Shear pin failure with rapid downpower to 50 percent on May 5, 2016

b. Findings

Introduction. A Green self-revealing finding was identified for the inadequate design verification of the travelling screens system in accordance with EN-DC-149, "Acceptance of Vendor Documents." Specifically, Entergy replaced 'C' and 'D' travelling screens during the May 2015 refueling outage, but did not identify that the installed shear pins did not meet the plant design during engineering reviews of the modification. This caused the shear pins in the 'C' and 'D' traveling screens to prematurely fail during a large seaweed intrusion event on May 5, 2016, and led to a 50 percent rapid reduction in power.

Description. On May 5, 2016, the PNPS control room received alarms for elevated differential pressures across all four traveling screens due to intake structure fouling. Operators were dispatched to the screen house and the traveling screens were placed in FAST mode. The differential pressure for travelling screens 'A' and 'B' improved after placing them in FAST mode. Operators identified that the differential pressure for travelling screens 'C' and 'D' degraded and the shear pins for traveling screens were broken. Control room operators rapidly reduced reactor power to 50 percent in accordance with procedures in response to the broken shear pins. Local operators went to replace the broken shear pins and discovered that the 1/2" broken shear pins were smaller than the 11/16" shear pins pre-staged in the coastal storm prep box and installed in travelling screens 'A' and 'B'.

Traveling screens 'C' and 'D' were replaced during the refueling outage in May 2015 under work orders 367342 and 367344. However, the new screens were supplied with 1/2" shear pins not the required 11/16" shear pins called for by the Pilgrim design. The site had modified the traveling screens to use 11/16" shear pins in 1995 (FRN 85-80C-26) to increase the amount of screen clogging the system could survive. The system drawings were modified to reflect the 1995 change, but the modification was not incorporated into vendor design documents or fabrication drawings for the May 2015 traveling screen replacement. The 1/2" shear pins that were left in the new screens after the modification had a max shear strength of only 3877 lbs, whereas the 11/16" shear pins that should have been installed, had a max shear strength of 8050 lbs. As a result, during the large seawater intrusion event on May 5, 2016, the 'C' and 'D' traveling screens with 1/2" shear pins failed, while the 'A' and 'B' traveling screens with 11/16" shear pins did not.

Entergy completed the engineering review and acceptance of the vendor drawings for the May 2015 modification in accordance with EN-DC-149, "Acceptance of Vendor Documents." EN-DC-149 establishes the process to be used to control the receipt, distribution, review, and revision of technical vendor documents. Section 5.5, Review of Vendor Documents, states that the Document Reviewer should ensure that the vendor document complied with the specification, satisfied the design concept, and was consistent with site commitments. However, Entergy identified, through its cause evaluation, that the engineer that reviewed the vendor documents for the May 2015 modification did not identify that the part numbers in the vendor's fabrication documentation did not match the requested parts. The cause evaluation concluded the engineers inadequate review caused the incorrect shear pins to be installed in the new 'C' and 'D' traveling screens when they were installed in the plant.

Entergy entered the finding into the CAP as CR-2016-3202. Entergy has installed the modified shear pin assembly in 'C' and 'D' travelling screens, has revised system drawings to more clearly depict the changes made per FRN 85-80C-26, and is currently in the process of performing an apparent cause evaluation.

Analysis. The inspectors determined that not performing an adequate design verification of the travelling screens system in accordance with EN-DC-149, "Acceptance of Vendor Documents," was a performance deficiency that was reasonably within Entergy's ability to foresee and prevent. Specifically, Entergy's review and acceptance of vendor fabrication drawings did not identify that the shear pins to be installed were inadequately sized, resulting in a reduced loading capacity of the traveling screens. This finding is more than minor because it is associated with the Initiating Events cornerstone attribute of Design Control and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure of the 'C' and 'D' travelling screens shear pins resulted in an unplanned 50 percent reduction in power. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The inspectors determined that the finding had a cross-cutting aspect in Human Performance, Avoid Complacency, because Entergy did not recognize and plan for the

possibility of mistakes, latent issues, and inherent risk. Specifically, Entergy did not identify that vendor supplied documentation and part numbers did not match Entergy's updated documentation. [H.12]

Enforcement. This finding does not involve enforcement action because inspectors did not identify a violation of associated regulatory requirements. Because this finding does not involve a violation and is of very low safety or security significance, it is being characterized as a FIN. **(FIN 05000293/2016002-01, Inadequate Review of Vendor Documents Results in Shear Pin Failure)**

4OA5 Other Activities

Repetitive Degraded Cornerstone (Column 4) Follow-Up Activities

Background

As described in the annual assessment letter, dated March 2, 2016 (ADAMS Accession No. ML16061A419), PNPS remains in the Repetitive Degraded Cornerstone Column (Column 4).

Completed Activities

Inspectors conducted the Inspection Procedure 95003 Phase 'B' inspection from April 4 – 8, 2016. The purpose of this inspection was to review overall CAP performance since the last problem identification and resolution inspection conducted in August 2015. The results of this inspection are documented in NRC Inspection Report 05000293/2016009, dated May 20, 2016 (ADAMS Accession No. ML16144A027).

The NRC conducted the 2015 Annual Assessment Meeting for Pilgrim on April 13, 2016. The meeting summary is available in ADAMS (Accession No. ML16116A005).

Regional NRC management conducted weekly teleconferences with Pilgrim's Recovery Manager to discuss the station's progress related to Column 4 recovery efforts. Regional management conducted multiple site visits to Pilgrim to meet with senior Pilgrim management, as well as provide oversight for various inspections conducted during the second quarter. Additionally, the NRC Executive Director for Operations conducted a site visit on May 24, 2016.

On June 2, 2016, NRC staff provided a briefing to the Commission on the results of the Agency Action Review Meeting that included a discussion of Pilgrim performance. At this same meeting Entergy also briefed the Commission on the status of their actions to address the performance deficiencies that led to their entry into Column 4. Links to related meeting materials can be found on the NRC public webpage at <http://www.nrc.gov/info-finder/reactors/pilg/communications.html>.

Finally, the resident inspectors conducted an annual problem identification and resolution inspection sample on Entergy's initial interim recovery actions. The results of this inspection are documented in Section 4OA2 of this inspection report.

4OA6 Meetings, Including Exit

On August 1, 2016, the inspectors presented the inspection results to Mr. John Dent, Site Vice President, and other members of the PNPS staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by Entergy and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," section (a)(4) requires, in part, that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, Entergy did not assess and manage risk on May 17, 2016, when the electric fire pump was removed from service in conjunction with the X-105 instrument air dryer and portions of the 'D' RHR system. Entergy entered this issue into the CAP as CR 2016-3466. The inspectors evaluated the finding using IMC 0609, Attachment 0609.04, "Initial Characterization of Findings," issued June 19, 2012. The attachment instructs the inspectors to utilize IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012. The inspectors determined that the finding is of very low safety significance (Green) because the performance deficiency did not affect the design or qualification of a mitigating structure, system, and component, did not represent a loss of system and/or function, and did not represent an actual loss of at least a single train for greater than its TS allowed outage time.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Dent, Site Vice President
J. MacDonald, General Plant Manager
B. Barrus, Senior Engineer
G. Blackenbiller, Chemistry Manager
R. Blagbrough, Senior Engineer
B. Chenard, Director Engineering
J. Cox, Quality Assurance Assessor
W. Carroll, Senior Engineer
S. Das, Senior Lead Engineer
G. Flynn, Operations Manager
B. Frazer, Operations
P. Gallant, Assistant Operations Manager
K. Gracia, Shift Manager
E. Hatzinikolaou, System Engineer
M. Jacobs, Manager Nuclear Oversight
G. James, Reactor Engineering Supervisor
C. Julius, Work Week Manager
K. Kampschneider, Senior Engineer
M. Landrieu, Fire Protection Engineer
M. Landry, Senior Engineer
M. Mantenfel, Engineering Supervisor
F. McGinnis, Regulatory Assurance
C. McMorrow, Fire Marshall
P. Miner, Regulatory Assurance Engineer
P. Mone, Senior Engineer
R. Morris, Electrical System Engineer
D. Noyes, Director Recovery
E. Perkins, Licensing Manager
K. Sejora, Sr HP Chemistry Specialist
S. Valez, Reactor Engineer
G. Vonder-Esch, Recovery Manager
J. Whalley, Operations Shift Manager
K. Woods, Engineering Supervisor
A. Zelig, Radiation Protection Manager

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened/Closed

05000293/2016002-01	FIN	Inadequate Review of Vendor Documents Results in Shear Pin Failure (Section 4OA3)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

1.4.4, New England Power Grid Operations/Interfaces, Revision 27
 2.1.15, Daily Surveillance Log (TSs, FSAR, and Regulatory Agencies), Revision 228
 2.1.37, Coastal Storm – Preparations and Actions, Revision 40
 2.1.42, Operation During Severe Weather, Revision 31
 2.2.1, 345kV System, Revision 41
 2.4.144, Degraded Voltage, Revision 44
 5.3.31, Station Blackout, Revision 21
 5.9.1, Extended Loss of AC Power (ELAP), Revision 1
 8.C.40, Seasonal Weather Surveillance, Revision 35
 ARP-C3R, Alarm Response Procedure, Revision 45
 ENN-PL-158, Transmission Grid Interface and Compliance with NERC Standards, Revision 9

Condition Reports

2016-3602	2016-3642	2016-3803	2016-3808	2016-4015	2016-4064
2016-4067	2016-4068	2016-4071	2016-4072	2016-4076	2016-4079
2016-4082	2016-4083	2016-4084	2016-4085	2016-4086	2016-4087
2016-4088	2016-4089	2016-4090	2016-4091	2016-4092	

Maintenance Orders/Work Orders

00278204	00322158	00354536	00398515	00436187	52605891
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Miscellaneous

ESOMS Narrative Logs
 Updated Final Safety Analysis Report, Section 8
 M/LCC 2, Abnormal Conditions Alert, Revision 18
 NRC GL-2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power
 Switchyard Transformers System Walkdown Checklist
 System Health Report for 23 kV and Transformers, Q1-2016
 System Health Report for 345 kV, Q1-2016
 System Health Report for Non-Safety Related HVAC, Q1-2016
 System Health Report for Safety Related HVAC, Q1-2016

Section 1R04: Equipment Alignment

Procedures

- 2.2.36, Instrument Air Systems, Revision 82
- 8.C.13, Locked Component Lineup Surveillance, Revision 86
- 8.E.47.1, Control Room/Radwaste Filtration System Instrumentation Calibration/Logic Functional Test, Revision 40
- 8.7.2.7, Measure Flow and Pressure Drop Across Control Room High Efficiency Air Filtration System (CHREAFS), Revision 37
- 2.2.46, Control Room, Cable Spreading Room, and Computer Room Heating, Ventilation, and Air Conditioning System, Revision 58

Condition Reports

2016-3778 2016-3780 2016-3825

Miscellaneous

Tagout 1C21-1/31-029-K-117, Diesel Air Compressor K-117 Overhaul

Drawings

- M18C-4, Compressor Cooling Water Process & Instrumentation Diagram, Revision 1
- M220, SH1, P&ID Compressed Air System, Revision 77
- M286, Heating Ventilation and Air Conditioning Temperature Control Diagram for Cont. Rm, Cable Spreading & Comp. Rm., Revision 19
- M287, Plant Ventilation Diagram, Revision 41

Section 1R05: Fire Protection

Procedures

- 1.3.135, Control of Doors, Revision 8
- 5.5.2, Special Fire Procedure, Revision 53
- 5.5.2, Special Fire Procedure, Attachment 12, 4160V Switchgear "A" and Battery Room "A" EL.37, Revision 55
- 5.5.2, Special Fire Procedure, Attachment 21, Diesel Generator, Revision 55
- 5.5.2, Special Fire Procedure, Attachment 24, Screenhouse Building El. 23', Revision 54
- EN-DC-161, Control of Combustibles, Revision 13

Condition Reports

2015-08642 2016-02452 2016-02481 2016-02571 2016-02577

Miscellaneous

- 89XM-1-ER-Q-E5, Fire Hazard Analysis, Revision 13
- 89XM-1-ER-Q, Updated Fire Hazard Analysis, Revision 16
- Fire Area 5.1, Fire Zone 5.1, "A" Train Service Water Pumps Room, Revision 16
- Fire Area 5.2, Fire Zone 5.2, "B" Train Service Water Pumps Room, Revision 16
- Fire Area 5.3, Fire Zone 5.3, "C" Service Water Pump Room, Revision 16
- Fire Area 1.9, Fire Zone 2.2, "A" Switchgear and Load Center Room, Revision 16
- Fire Area 1.10, Fire Zone 4.1, "B" Train Diesel Generator Room, Revision 16
- Fire Area 1.10, Fire Zone 4.2, "B" Train Diesel Day Tank Room, Revision 16
- Fire Area 4.3, Fire Zone 4.3, "A" Train Diesel Generator Room, Revision 16
- Fire Area 4.3, Fire Zone 4.4, "A" Train Diesel Day Tank Room, Revision 16
- FPEE17, Fire Protection Engineering Evaluation 17 - Exterior Walls, Revision 0

FPEE 49, Barrier Between "A" Division Battery Room and Switchgear Room, Revision 0
FPEE 92, III-T Penetration in Barrier Between "A" Division Battery Room and Switchgear Room,
Revision 0

Drawings

A320SH1, Reactor Building Plans – El. 117'0", 101'0", 91'3", 74'3" & Intake Building Plan - Fire
Barrier System, Revision E4

DG-83-61B, Upgrade of Removable Fire Wall Panel to 3 Hr Rating – Switchgear "B", dated
10/18/86

M474 SH1, Fire Protection System Fire Damper Schedule, Revision E6

M474 SH2, Fire Protection System Fire Damper Details, Revision E5

Section 1R06: Flood Protection Measures

Maintenance Orders/Work Orders

52675632 52675834 52690414 52690849

Section 1R07: Heat Sink Performance

Procedures

3.M.3-61.12, Emergency Diesel Generator 12-Year Preventative Maintenance - Critical
Maintenance, Revision 5

TP15-004, General Procedure for Eddy Current Testing of Heat Exchanger Tubing, Revision 0

Condition Reports

2016-02625

Maintenance Orders/Work Orders

00257372

Section 1R11: Licensed Operator Regualification Program

Procedures

8.7.4.4, Main Steam Isolation Valve Operability, 60% Power, Revision 26

Maintenance Orders/Work Orders

00444248

Miscellaneous

O-RQ-06-02-92(32)

SES-2010-07

Section 1R12: Maintenance Effectiveness

Procedures

3.M.3-49, Emergency Lighting Battery Maintenance/Preventive Maintenance and Battery
Replacement Procedure, Revision 30

8.B.21, Emergency Lighting Units, Revision 44

EN-DC-204, Maintenance Rule Scope and Basis, Revision 3

EN-DC-205, Maintenance Rule Monitoring, Revision 5

Condition Reports

2014-1419	2014-2339	2014-2345	2014-2905	2014-2994	2014-3522
2014-4182	2014-4617	2014-4631	2014-4632	2014-4699	2014-5356
2014-6180	2014-6575	2014-6664	2014-6816	2015-0527	2015-1372
2015-1435	2015-1621	2015-2292	2015-2465	2015-5399	2015-5400
2015-5402	2015-5462	2015-5891	2015-6039	2015-6151	2015-6152
2015-6660	2015-6756	2015-7461	2015-7535	2015-8077	2015-8326
2015-8972	2015-9607	2015-9966	2016-0018	2016-0041	2016-0707
2016-0744	2016-1095	2016-1651	2016-1696	2016-2007	2016-2372
2016-3227	2016-3469	2016-3665	2016-3771		

Maintenance Orders/Work Orders

403463	407158	407160
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Miscellaneous

System Health Reports

MRBD-46B, 23kV and SDT System Maintenance Rule Basis Document, Revision 9
 FSAR Section 8.3 Secondary AC Power Source (Shutdown Transformer)

Section 1R13: Maintenance Risk Assessments and Emergent Work ControlProcedures

1.5.22, Risk Assessment Process, Revision 26
 EN-OP-119, Protected Equipment Postings, Revision 7
 EN-OP-119, Protected Equipment Postings, Revision 8
 EN-OP-119, Protected Equipment Postings, Revision 8
 EN-WM-104, On Line Risk Assessment, Revision 12

Condition Reports

2016-4151

Miscellaneous

ESOMS LCO Tracker
 ESOMS Narrative log
 Equipment Out Of Service (EOOS) Risk Assessment Tool
 Online Risk Assessment for the week of 6/12/16
 Online T-Week Report
 Protected Equipment List

Section 1R15: Operability Determinations and Functionality AssessmentsProcedures

3.M.3-47, Revision 87, "Load Shed Relay Operational/Functional Test – Critical Maintenance
 8.5.3.1, Reactor Building Closed Cooling Water System Quarterly and Biennial Comprehensive
 Operability, Revision 61
 8.7.4.4, Main Steam Isolation Valve Operability, 60% Power, Revision 26
 8.Q.3-3, 480V AC Motor Control Center Testing and Maintenance, Revision 58
 8.Q.3-3, 480V AC Motor Control Center Testing and Maintenance, Revision 65
 EN-DC-132, Control of Engineering Documents, Revision 5
 EN-FAP-OP-006, Operator Aggregate Import Performance Indicator, Revision 2
 EN-OP-104, Operability Determination Process, Revision 10

Condition Reports

2016-01072	2016-01091	2016-01657	2016-02163	2016-02250	2016-02300
2016-02309	2016-02984	2016-03419	2016-03446	2016-03565	2016-03590
2016-03598	2016-03722	2016-03967	2016-03993		

Maintenance Orders/Work Orders

00208077	00438577	52663117
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Miscellaneous

EC 30600

Drawings

C15.0.2805, Qualification of Doors #145/159, #147 and #150 for Design Loads, Revision 1
E5-189-4, Schematic Diagram ECCS Pump Feeder 4160V Bus A5 SH 17A, Revision 6

Section 1R18: Plant ModificationsCondition Reports

2016-3326	2016-3337	2016-3339	2016-3157	2016-3161
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Maintenance Orders/Work Orders

445634	445641	445791	445794
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Miscellaneous

C15.0.3441, Modification of SSW Pipe Support H29-1-1065, Revision 0
C15.0.3091, Pipe Support H29-1-1064, Revision 0
EC 64673, Repair of Salt Service Water Pipe Support H29-1-1064, Revision 0
EC 64688, Repair of Salt Service Water Pipe Support H29-1-1063, Revision 0
EC 64713, Repair of Salt Service Water Pipe Support H29-1-1062, Revision 0
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3.M.3-60, Infrared Thermography, Revision 9
3.M.3-61.5, Emergency Diesel Generator Two-Year Overhaul Preventative Maintenance -
Critical Maintenance, Revision 64
3.M.4-14.3, Reactor Building Closed Cooling Water Pump Maintenance- Critical Maintenance,
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8.5.3.1, Reactor Building Closed Cooling Water System Quarterly and Biennial Comprehensive
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2016-2655	2016-2657	2016-2668	2016-2669	2016-2671	2016-2674
2016-2678	2016-3470				

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- 3.M.2-5.6.13, Manual Operation of TIP System, Revision 1
- 8.5.2.2.2, LPCI System Loop B Operability – Pump Quarterly and Biennial (Comprehensive)
 Flow Rate Tests and Valve Tests, Rev. 52
- 8.7.4.4, Main Steam Isolation Valve Operability, 60% Power, Revision 26
- 8.M.2-2.1.10, 4160 Volt Emergency Buses A5 and A6 Loss of Voltage and Degraded Voltage
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 6.4-331, Operation Common Radiation Detectors and Air Samplers, Revision 23
 6.4-350, Calibration Portable Neutron Meters, Revision 4
 6.5-160, Calibration ARM, Revision 36
 6.5-170, Calibration Vent System Rad Monitors Using ARM Sensor, Revision 26
 6.5-305, Post Accident Sampling System Source Calibration, Revision 11
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PNPS 6.5-170 Attachment 4 Refuel Floor Vent Exhaust PRM Calibration Sheet for RM1705-8A, April 27, 2016

PNPS 6.5-170 Attachment 4 Refuel Floor Vent Exhaust PRM Calibration Sheet for RM1705-8B, March 22, 2016

PNPS 6.5-170 Attachment 4 Refuel Floor Vent Exhaust PRM Calibration Sheet for RM1705-8C, April 27, 2016

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Section 40A7: Licensee Identified Violations

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LIST OF ACRONYMS

AC	alternating current
ADAMS	Agencywide Documents Access and Management System
CAP	corrective action program
CARB	corrective action review board
CFR	<i>Code of Federal Regulations</i>
CRG	condition report review group
DPIC	departmental performance improvement coordinator
EC	engineering change
EDG	emergency diesel generator
FSAR	Final Safety Analysis Report
IMC	Inspection Manual Chapter
kV	kilovolt
MSIV	main steam isolation valve
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PHC	plant health committee
PM	preventive maintenance
PNPS	Pilgrim Nuclear Power Station
RHR	residual heat removal
RBCCW	reactor building component cooling water
TS	technical specifications